



DEPARTMENT OF THE ARMY

U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

17 SEP 1997

REPLY TO
ATTENTION OF:

CECW-OE-C/CEIM-P (25-1a)

MEMORANDUM FOR USACE COMMANDS, ATTN: CHIEFS OF CONSTRUCTION,
OPERATIONS AND READINESS, DIRECTORS OF
INFORMATION MANAGEMENT

SUBJECT: USACE High Frequency (HF) Communications Program -
Interim Guidance

1. References:

- a. Memorandum CEIM-RT, subject: USACE Radio Policy
(Revised), 7 Jun 88.
- b. Memorandum CECW-OE-P, subject: USACE High Frequency (HF)
Radio Program, 17 Oct 94.
- c. Memorandum CECW-OE-EOC/CEIM-S, subject: Moratorium on
Acquisition of Command and Control Equipment, 27 Jul 95.
- d. Defense Information Systems Agency Joint Interoperability
and Engineering Organization Study, Subject: United States Army
Corps of Engineers Backup Communications Analysis and
Recommendations Report dated Jan 96.

2. The purpose of this correspondence is to provide an update on the Corps High Frequency (HF), Single-Sideband Radio Program and to provide interim guidance concerning its future status and operations within the Corps of Engineers. The use of HF for back-up communications within the Corps of Engineers has been the subject of discussion in both the information management and emergency management communities. The concern centers around the continued need for HF radio communications, and whether HF should be replaced by an alternative back-up communications system.

3. The Defense Information Systems Agency (DISA) has been tasked to review the USACE emergency operations HF radio network to determine a cost-effective, robust approach for improving back-up communications. The enclosure includes a discussion of background issues and Command interim guidance, as well as recommendations which have been accepted for implementation Corps-wide.

CECW-OE-C/CEIM-P (25-1a)

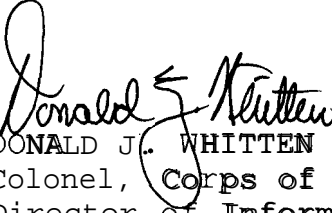
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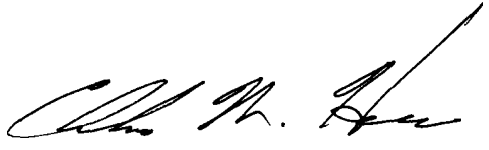
4. Presently, the HF program is undergoing revitalization. The overall objective remains to ensure that the Corps of Engineers will maintain a viable, back-up communications capability in full compliance and interoperability with the Department of Army and other Federal agencies.

5. Points of Contact for questions and/or comments are Mr. Larry Broun, CECW-OE-C, (202) 761-5800, e-mail: larry.broun@usace.army.mil and Mr. Oscar Anderson, CEIM-P, (202) 761-0736, e-mail: oscar.r.anderson@usace.army.mil.

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USACE HIGH FREQUENCY (HF) COMMUNICATIONS PROGRAM INTERIM GUIDANCE

A. BACKGROUND

1. The rationale for retaining USACE HF radio capability in the Corps communications architecture, particularly in today's communications technology environment, has come under continuing challenge from a variety of Corps audiences. Some believe that technology has far out-distanced the capability of HF radio and are questioning whether HF should be replaced by an alternative back-up communications system. Many have questioned its value-added significance, while others say they can no longer justify the expense of operating and maintaining the system, as well as keeping people trained.

2. There are two HF systems fielded within the Corps, namely, a Department of the Army (DA) system (Harris) and a Corps of Engineer system (Mackay). The Harris radio was purchased by DA for emergency communications, command and control, and fielded in the Corps in 1989. Prior to arrival of the Harris equipment, the MacKay radios, often referred to as the Corps Disaster radio, had been purchased and fielded (1987-88) with civil funds to provide a Corps system for operational missions, as well as for emergency management functions. Finally, in addition to the two required systems, various and sundry other HF radio systems have been acquired over the years by individual field activities to carry out the same supporting missions.

3. Important to any radio modernization effort is the fact that the Corps communications capability must continue to remain interoperable with other Army/DoD and Federal agencies in a national emergency or crisis. The Federal Emergency Management Agency (FEMA), the lead agency for the Federal Response Plan (FRP), has designated HF as their primary back-up communications system. In their view, HF radio will play a major role in a true catastrophic event and all Federal agencies who have primary responsibilities under the FRP would be seriously hampered without an HF radio capability. All key players in the Department of Army Continuity of Operations/Continuity of Government (COOP/COG) program, of which the Corps is one, **must** have a compatible HF radio capability in order to communicate, execute orders and perform assigned missions. Accordingly, as an Army Major Command (MACOM), the Corps of Engineers will maintain an HF capability in compliance with HQDA policy, and to insure that the Corps will be able to carry out its emergency support function (ESF#3) missions under the FRP in the event of a significant disaster, natural or man-made.

Enclosure

B. HF RADIO GUIDANCE.

The following recommendations has been accepted and adopted for implementation Corps-wide:

(1) **Standardize HF radio equipment at all Corps locations by utilizing the DA (Harris) HF radio with MILSPEC Automatic Link Establishment (ALE).** This is an automated voice and data system.

ALE reduces operator time and makes efficient use of the frequency spectrum by scanning frequencies and automatically linking with the best path available. All Harris radios have been equipped or upgraded to this standard. ALE operation will begin at all sites as soon as a specific date is selected and authorized from HQUSACE. The initial date to commence will be announced within the next 30 days by separate correspondence.

(2) **Begin phase-out of the Mackay Radio system and other acquired, non-interoperable radio equipment which is no longer required or desired for command and control.** The Corps provided Mackay Radio equipment does not include an ALE capability and cannot be economically configured for this system. It is no longer considered a command and control asset (except for gateway node locations) and therefore will no longer be supported by emergency management funds. Other exceptions will be considered on a case-by-case basis. This means that a Commander, after assessing his organization's requirement for this asset, may use his discretion in deciding whether to continue supporting it, or whether turn-in, transfer, or re-use in another capacity would be the most appropriate course of action. This option is available immediately upon the effective date of this guidance.

(3) **Standardize HF radio equipment for tactical emergency response purposes.** All other HF-SSB radio equipment purchased in the future by Major Subordinate Commands/districts, Laboratories and Field Operating Activities for emergency purposes shall adhere to MILSPEC ALE standards. (See MILSPEC Standard 188-141A, Interoperability for Performance Standards for Medium and High Frequency Radio Equipment.) In addition to modification of existing transportable Harris radios which are clumsy, a lightweight tactical system with a ruggedized computer will be identified to meet new requirements for deployable E-mail capable radios. This initiative is being researched and discussed by a Command and Control Task Force (C²TF), who will identify and field this equipment.

(4) Implement an HF E-Mail back-up messaging system.

Transmission of E-mail over HF radio is currently being done in both the U.S. Air Force and Navy. A Corps beta test of the HF E-mail has been initiated between Portland (the gateway node which transfers messages into the CEAP wide-area network (WAN)), and outstations in San Francisco (SPD), Anchorage (POD) and Seattle (NWD). Following the conclusion of beta testing, equipment will be upgraded for each MSC, district, Lab and FOA over a three year period. Upgrades will be prioritized based on catastrophic disaster risk. This effort will be centrally funded from Emergency Management, HQUSACE. The ultimate concept is to have four or five gateways strategically positioned throughout the Corps. DA (Harris) radios at each Corps organization will be modified as transportable out-stations, including tactical electronics shipping case, computer, and high-speed modem. This will allow each Corps HF radio site to deploy to remote locations or operate in the absence of telephone connectivity by transmitting and receiving HF E-mail through the gateway to the CEAP WAN and/or Internet on a 24 hour/7 day basis. Plans are underway to upgrade DA-purchased Harris radios in NWD and SPD districts this fiscal year, with additional gateways and outstations to be added over the following three years. Because the primary mode of operation for these radios will be ALE transmitting E-mail data, some Corps elements may be able to utilize rooftop antennas, which will allow them to eliminate remote antenna fields and microwave links which are presently in use for voice transmission.

(5) Reorganize the Corps= HF radio network, and its emergency response mobile, tactical communications assets. With the establishment of an HF E-mail system, five gateways will be established to provide connectivity between the radio network and the CEAP/Internet system:

a. Gateways will be located in Portland, Vicksburg and three additional locations to be determined by HQUSACE. Location of gateways will be driven by technical considerations. Each gateway will provide connectivity to the CEAP/Internet for a sub-network of HF radios within proximity to the gateway.

b. The MSC Commander responsible for each of the designated gateway locations shall appoint an individual at that gateway location to serve as the Regional Emergency Communications Officer (RECO). The RECO will maintain the gateway between the HF-radio network and the CEAP/Internet. The RECOs will serve as members of the C²TF Communications Subgroup.

c. The RECO will also provide technical support,

coordinate training, conduct exercises, and assure the readiness of the HF-radio sub-network associated with the gateway. Because the sub-network may cross boundaries, the RECO will coordinate with the Directors of Information Management in affected MSC and districts within the sub-network.

C. C² Task Force.

A USACE command and control working group (now called the **C² Task Force**) under the leadership of the HQs Emergency Management office (CECW-OEC) has been established for quite some time. All levels of the command are represented and are often in attendance at the quarterly meetings which are held in different division/district headquarters. Minutes are published and disseminated Corps-wide. There is ample opportunity for IM, as well as EM managers to have input into the decision process of the issues which are taken up by this group. For at least the last year, the Task Force has been intimately involved in discussing and refining HF issues. Although the Task Force considers other issues than communications, it is still one of the best forums or vehicles to recommend changes/improvements to the Corps radio infrastructure. Additional information can be obtained reference the activities of this group via electronic means through the ENGLink at <http://155.75.60.146>.